

Report of the Committee on Tuberculosis

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Vice Chair: Michael S. VanderKlok, Lansing, MI

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The Committee met on October 16, 2006, from 1:00 to 6:30 p.m. at the Minneapolis Hilton Hotel, Minneapolis, Minnesota. There were more than 160 attendees. Dr. Kathleen M. Connell and Dr. Michael S. VanderKlok, presided. In her opening remarks, Dr. Connell reviewed the day's agenda and welcomed members and guests. The Chair determined that a quorum was present to conduct business.

Formal presentations began with Dr. Mick Dutcher, Senior Staff Veterinarian, National Tuberculosis (TB) Eradication Program, Veterinary Services (VS), Animal and Plant Health Inspection Services (APHIS), United States Department of Agriculture (USDA) provided the current status of the U.S. Bovine TB Eradication Program. The full text of his report is included in these proceedings.

Dr. Kathy Orloski, Senior Staff Veterinarian, National TB Eradication Program, VS-APHIS-USDA presented an update on the U.S. National Surveillance Program for Bovine TB. The full text of his report is included in these proceedings.

Dr. Michele Miller, Disney's Animal Kingdom, Department of Veterinary Services, provided a Time Specific Paper entitled Elephant TB Diagnostics and Guidelines. This paper is included in its entirety in these proceedings.

Dr. Maria Koller-Jones, Senior Staff Veterinarian, Animal Health and Production Division, Canadian Food Inspection Agency (CFIA), provided the current status of the Canadian Bovine TB Eradication Program.

The current status of Mexico's Campaign Against TB and an update on Mexico's National Surveillance Program was delivered by MVZ M. en C. J. Alfredo Gutierrez Reyes, Sub director de Sanidad en Especies Mayores, Mexican Secretary Of Agriculture, Animal Husbandry, Urban Development, Fisheries And Food. The full text of his report is included in these proceedings.

Dr. Billy Johnson, Bi-National TB and Brucellosis Committee Coordinator, followed with a report on the Bi-National Committee (BNC) activities. Dr. Johnson gave a brief history of this 16-member committee. He discussed TB reviews in Mexico, the waiver conditions document and the current statuses of states. The full text of his report is included in these proceedings.

Report of the Scientific Advisory Subcommittee on Tuberculosis
Chair: Mitch Palmer
October 14, 2006

The National Tuberculosis Working Group for Zoo and Wildlife Species was established to collect data and provide recommendations for the development of guidelines for the control of TB in elephants and other exotic animals. The current guidelines pertaining to elephants recommend annual culture of trunk wash samples for surveillance. While highly specific, this strategy lacks adequate sensitivity for early diagnosis and disease control. A workshop on advances in TB diagnosis and treatment in zoo species was held at Disney's Animal Kingdom on May 20-22, 2005 with participants from the American Association of Zoo Veterinarians, academia, industry, zoo / circus veterinarians, a medical doctor with TB expertise, USDA-APHIS, and USDA-ARS. The workshop provided a venue for information sharing and coordination of a plan to advance TB diagnosis and treatment of elephants. With a majority consensus of the workshop participants, it was determined that serum should be collected for evaluation by ELISA (University of California), VetTB Stat-Pak™, and MAPIA (Chembio Diagnostic Systems) annually in addition to trunk wash and culture. Advantages of serologic-based tests include early diagnosis relative to trunk wash, increased sensitivity, and ability to monitor therapy (i.e., recrudescence of responses associated with failed therapy). The TB SAS supported the conclusions of the 2005 Workshop and great progress was made in the validation of serologic-based testing over the past year.

A second workshop of the Elephant TB working was held in Tampa on September 25, 2006. The purpose was to evaluate additional data on serologic tests and to update the guidelines for the diagnosis and treatment of TB in elephants. Presentations included an overview of the Center for Veterinary Biologics policy for evaluation and licensing of diagnostic tests and an update on the elephant TB STAT-PAK and multiple antigen print immunoassay (MAPIA). A lengthy discussion ensued concerning use of serologic tests for TB surveillance and implications on the current guidelines. A rough draft of new guidelines was formed with details to be finalized over the next 4-6 months. The major addition/change to these guidelines will likely be the inclusion of the elephant TB STAT-PAK and MAPIA in conjunction with trunk wash culture for initial surveillance. Implications on travel, quarantine, treatment, and further diagnostic assessment resulting from a positive serologic response will be included in the final document.

The Subcommittee supports the continued evaluation of improved TB surveillance strategies by the Elephant TB working group and recommends that finalized guidelines be presented at the Tuberculosis committee meeting, USAHA, 2007. The Subcommittee recommends an educational component to inform federal and state animal health officials on pertinent changes to the guidelines. A possible venue for this educational component is the annual tuberculosis epidemiology schools provided by APHIS-VS for state and federal veterinarians. The educational component may be coordinated through APHIS-VS, TB program staff and/or APHIS-VS, Animal Care (AC).

Furthermore, since the publishing of Tuberculosis Surveillance Plan for Non-Domestic Hoofstock in October 2001, significant advances have been made in the development of improved TB surveillance strategies, as demonstrated by the elephant TB working group. The TB SAS recommends that the guidelines for control of TB in zoo and wildlife species be updated by the national TB working group for zoo and wildlife species in close association with the USAHA Committee on Captive Wildlife and Alternative Livestock. In addition to non-domestic hoofstock, the working group may consider inclusion of strategies for the control of TB in camelids, rhinoceros, tapirs, lions, jaguars, etc.

USDA, Mexican animal health officials with Secretaria de Agricultura, Ganaderia, Desarrollo Rural, Pesca y Alimentacion (SAGARPA), and Canadian animal health officials with CFIA have outlined a project titled, Comparison of North American *Mycobacterium bovis* and *Mycobacterium avium* tuberculin purified protein derivative (PPD) in vivo (CCT) and validation of additional diagnostics for tuberculosis in cattle. The purpose of the study is to compare PPDs used for skin testing of cattle in TB eradication programs in North America (Canada, Mexico and the US) side by side using the CCT on a large number of animals from naturally infected herds. Skin test results will be compared with true infection status measured by histopathology and bacteriological culture. The data will be evaluated to determine if each PPD will similarly classify individual animals as negative, suspect or reactor. Data will be used to identify a potential PPD product that could be used as a single North American reference PPD. In addition to the primary PPD comparative study the effort will provide a unique opportunity to allow the gathering of field data for validation of proposed experimental blood based tuberculosis diagnostic tests.

The Subcommittee supports the international efforts to accomplish a research project of this scope. The Subcommittee encourages USDA, SAGARPA and CFIA to provide the necessary resources to carry out such a study. The TB SAS also encourages involved parties to exploit the opportunity to obtain well-characterized samples that could be used to validate novel experimental diagnostic assays. The benefits to US, Mexico, Canada and their respective eradication efforts could be enormous.

In 1996, under the direction of the Committee on Tuberculosis, an ad-hoc group was formed to develop Criteria for evaluating experimental tuberculosis test performance for official test status. These criteria were published in the 1996 USAHA Proceedings and provided specific guidelines for novel test evaluation and comparison to existing testing methods for the diagnosis of *M. bovis* infection in cattle. Since 1996 various experimental diagnostic tests have emerged for cervids and various zoo species as well as cattle. Due to the lower number of cervids and zoo species present in the US, the criteria outlined in 1996 are not directly relevant to those species. It has also become apparent that evaluation of test sensitivity in cattle, as outlined in the 1996 criteria, is especially difficult given the current low prevalence of *M. bovis* infection in cattle in the US.

The Subcommittee recommends that the Committee on Tuberculosis form an ad-hoc group to re-evaluate the 1996 criteria and provide direction to the Committee on Tuberculosis as well as TB test manufacturers on reasonable means of evaluation of experimental tests for cervids and various zoo species for which very large numbers of animals are not available for testing and to re-evaluate methods to reasonably establish test sensitivity in cattle in an environment of very low TB prevalence.

In September 2006, PriTest of Redmond, WA submitted a report on "An efficient cost effective two-hour assay method for accurately identifying TB infected animals using ferrite antigens and CCD imaging." This report was a follow-up to the interim report submitted in 2005. PriTest has developed the SeraLyte-Mbv test to be used as a primary test and replacement to the caudal-fold tuberculin test (CFT). Data included results from badger serum samples from the United Kingdom and serum of cattle from various sources. Pri-Test has proposed proceeding to Phase II of the evaluation for official test status, as outlined in the 1996 guidelines in USAHA proceedings, and requested that the required number of samples from 10 accredited free herds be supplied to PriTest along with samples from reactor herds including known positive samples.

In 2005, The Subcommittee recommended conditional approval of the VetTB Stat-Pak from Chembio Diagnostics Systems of Medford, NY, as an ancillary test for tuberculosis in cattle, white-tailed deer, red deer and elk for a period of 2 years and requested annual updates which have been supplied to the Subcommittee by Chembio Diagnostic Systems, Inc. in the form of a document titled, Update on Chembio VetTB Stat-Pak kit for Detection of Tuberculosis

in Multiple Species. Progress has been made in the number of cattle and deer tested by the VetTB Stat-Pak. Sensitivity and specificity values have varied depending on host species. In addition to white-tailed deer, red deer and elk, data was provided on the accuracy of the VetTB Stat-Pak in other cervid species such as reindeer and fallow deer.

The Subcommittee recommends that blood samples be collected for analysis by PriTest's SeraLyte-Mbv, Chembio's VetTB Stat-Pak and other experimental assays for *M. bovis* infection in cattle. Samples should be collected from accredited free herds and in conjunction with current testing strategies in program herds; including confirmed *M. bovis*-infected herds, in herds under test and removal protocols, in herds being depopulated and in other high risk situations, under the direction of the Designated Tuberculosis Epidemiologist (DTE).

The Subcommittee further suggests to USDA the continued use of the VetTB Stat-Pak in white-tailed deer, red deer and elk in conjunction with current testing strategies in herds testing for accreditation purposes, in confirmed *M. bovis*-infected herds and in surveys of hunter-killed free-ranging deer. USDA is also encouraged to continue evaluation of species such as reindeer and fallow deer. Cervid industry producer groups are strongly encouraged to continue their support of experimental test validation, by providing blood samples for analysis. USDA should continue work already initiated to facilitate data collection, correlation of skin tests results to experimental assay results, and entry to the general data base on a deer species level, enhancing the ability for further data analysis. USDA should consider centralizing testing of cervids with the VetTB Stat-Pak and data collection at the National Veterinary Services Laboratories (NVSL).

At the Subcommittee meeting a presentation was made by the Michigan Department of Agriculture (MDA) proposing a pilot research project evaluating the use of the IFN- γ blood test (Bovigam) at points of cattle concentration (animal sale yards/markets) as an adjunct to slaughter surveillance for bovine tuberculosis.

The Subcommittee believes the Michigan Department of Agriculture (MDA) proposal could provide useful data; however, details are needed. The Subcommittee suggests that MDA prepare a detailed proposal for submission to USDA for consideration. Preliminary data suggesting that such a study would be logistically feasible would be useful.

The Committee approved the Subcommittee Report and the five recommendations.

Dr. Mick Dutcher provided an update on proposed changes to the Code of Federal Regulations (CFR) regarding the bovine tuberculosis program. He summarized proposed changes which are departures from the 2005 Cattle and Bison UMR approved by the Committee on Tuberculosis, internal reviews and audits, and ongoing international activities. USDA anticipates having a proposed rule for comment by march 2007, with potential finalization by the end of 2007.

Four state updates followed. Dr. Mike VanderKlok, Bovine TB Eradication Coordinator, Michigan Department of Agriculture, Lansing, Michigan, and the Vice Chair of the Committee on Tuberculosis provided the Michigan update. Michigan has been working on the eradication of bovine tuberculosis since its discovery in free-ranging white-tailed deer in an area of northern Lower Michigan in 1995, and in cattle in the same area in 1998. The Michigan program is based upon eradication of the disease in any species, but with the requirements that it be accomplished in a way that retains a viable livestock industry, and a sustainable wildlife and recreational industry, in the area of the state affected. Michigan has achieved TB free status in the Upper Peninsula, Modified Accredited Advanced (MAA) status in the majority of Lower Michigan, and Modified Accredited (MA) status in an area of the northern portion of Lower Michigan.

From January 2000 through September 2006, there have been 911,413 negative TB tests conducted in the MAA area of Michigan including 16,606 negative whole herd tests. Over 240,000 cattle undergo slaughter-based surveillance from this area each year, and 145,000 free-ranging white-tailed deer have been tested for TB statewide. No evidence of TB has been found in this area of Michigan. Mandatory official identification of all cattle prior to movement was instituted statewide in January 2000, and mandatory usage of official RFID electronic eartags will be required starting in March, 2007.

Over 244,121 TB tests have been conducted in the MA area of Michigan since January 2000, including 5,470 whole herd tests. Annual whole herd testing is required in this area and individual testing is required as outlined in the Uniform Methods and Rules for Tuberculosis Eradication. There has been mandatory usage of official RFID electronic identification eartags since July 2002, and all cattle are required to receive a movement permit. All major livestock sale yards within Michigan, and seven major slaughter plants throughout the United States which handle the majority of cattle from Michigan, have electronic readers that identify animals that reach these locations and transmit this information to a database. These systems allow quick and comprehensive gathering of information for use in conducting epidemiologic information in the event of TB occurrence. Fifteen thousand movement permits have been issued to date, including over 83,000 cattle.

There have been 40 cattle herds identified as infected with bovine tuberculosis in the MA area of Michigan since 1998. These herds have included over 3,570 total animals. Of these animals, there have been 85 confirmed positive for bovine tuberculosis. Only two of these herds (5%) have been found through slaughter surveillance, with the rest identified by whole herd testing. Eight of these herds were found through testing initially conducted by private accredited veterinarians. Twenty-eight of the herds contained only one TB infected animal, and only three herds have been found with more than three infected animals. Only one herd has been found since 2000 that has contained more than two infected animals.

The TB prevalence in wildlife has been decreased from a high of 4.9% to the current rate of 1.2% in the small endemic region of the MA area. Outside the area the prevalence rate is almost immeasurable. The current program of eliminating feeding and baiting that is thought to have historically contributed to transmission of the disease in wild deer, and continuing to keep pressure on maintaining the 50% reduction in deer numbers that has been accomplished in this area, appear to be successful in continuing to eradicate the deer in the wild.

The Michigan program has been successful in demonstrating that TB does not exist outside the MA area of the state, and that the surveillance, movement testing, identification, and permitting system has eliminated the transmission of disease in the MA area between livestock herds. The Michigan strain of bovine tuberculosis is unique to all other known strains, and has not been found in any other area of Michigan, any other state, or internationally. The focus of the program in livestock has been to find the disease immediately if it enters and herd, and before it can spread within or between herds. All evidence supports that this is working, but Michigan is now working on expanding the program to eliminate the transmission (spillover) of the disease from wildlife to livestock.

Dr. Bill Hartmann, Minnesota State Veterinarian provided the Minnesota update. In 2005, slaughter surveillance detected a TB infected cow that traced back to a northwestern Minnesota beef herd. The subsequent epidemiologic investigation identified four additional beef cattle herds, all within 25 miles of the first infected herd and all epidemiologically linked. A second round of testing this fall in adjacent cattle herds identified a sixth herd infected with TB that shared fence line contact with the first herd. In the fall of 2005 surveillance of hunter harvested white tailed deer within 15 miles of the known infected premises detected a single infected animal out of 474 sampled. White tailed deer collected on infected premises by permitted landowners in the winter of 2005-06 detected one TB infected animal. Both deer were shot within one mile of each other. Surveillance of cattle, bison, and farmed cervids within ten

miles of an infected premises or the collection location of an infected deer was initiated in early 2006. Additional deer surveillance around infected premises is planned for this fall's hunting season. To assure the eradication of TB from Minnesota's cattle herds and white tailed deer population, statewide surveillance of both cattle herds and free ranging deer will be conducted in the next year.

Dr. Dave Fly, New Mexico Assistant State Veterinarian provided the New Mexico update.

Dr. Bob Hillman, Texas State Veterinarian completed the state updates by providing the Texas update. In 2000, Texas gained Bovine Tuberculosis Accredited Free Status for all of the state, except El Paso and Hudspeth counties in far west Texas, which were regionalized and classified as Modified Accredited Advanced because of TB in the dairies of the El Paso milkshed.

Then during calendar year 2001 two infected herds were discovered in the Accredited Free portion of the state. These herds were a dairy and beef operation in Pecos County and a beef herd in Fayette County. Even though both of these herds were depopulated, Texas lost its Accredited Free status in June, 2002 and was reclassified to Modified Accredited Advanced Status, as result of tripping the "trigger" of two infected herds in a 48 month period of time. Epidemiological evaluation indicated that the source of infection was not from the El Paso milkshed.

Because of the history of bovine tuberculosis in the state over a long period of time, the Texas Animal Health Commission (TAHC) and the cattle industry of the state determined that a strategy be developed whereby the state could regain and retain TB Accredited Free Status. To accomplish this objective, Commission Chairman Mr. Richard Traylor formed a TB Task Force consisting of representatives from all segments of the cattle industry, practicing veterinarians, state animal health officials, and federal animal health officials. The Task Force was charged to develop a strategy that could be implemented to not just re-acquire TB Accredited Free Status, but also develop strategies to retain free status. After much deliberation the Task Force presented a report containing five recommendations which was approved and implemented by the Commission.

The five recommendations include the following:

1. Require official identification and testing of all dairy and breeding cattle exported from the state. During state fiscal year 2006 over 63,662 breeding cattle and 30,839 dairy cattle were tested for exportation from Texas.
2. Improve slaughter surveillance. Granuloma submission rates at Texas plants, like plants in many other states had fallen to such a low level that slaughter surveillance was not an effective surveillance tool. Since 2002 granuloma submission rates have improved as results of efforts by TAHC, Veterinary Services and Food Safety and Inspection Services (FSIS) staff to the point that slaughter plants in the state are submitting samples at a rate significantly higher than the standard.
3. Targeted Surveillance in dairy, and purebred and seedstock herds. Historically in Texas tuberculosis infected herds have been dairy or purebred/seedstock herds. The Task Force recommended that these segments of the industry be tested at a rate sufficient to detect one infected herd in 1000 herds. To accomplish this feat all dairies in the state would be tested (818 dairies, 342,937 cattle) and at least 2000 purebred or seedstock herds would be tested (2,014 herds, 128,489 cattle). This effort identified one infected dairy herd, which was depopulated.
4. Control TB in Mexican origin rodeo/roping cattle. Rules were implemented to require rodeo/roping cattle be TB test negative, on a test conducted by a US veterinarian, after importation and prior to utilization in events. Additionally, rodeo/roping cattle were to be tested annually. These rules are enforced by inspections at events and markets. From January 2004 through August 2006 TAHC staff conducted inspections of 17,042 cattle at

1,063 events and 1,835 cattle inspected at markets. Cattle which were found at events to not have a report of the required annual negative test were restricted until tested. Cattle presented at markets without a current test were restricted to movement for slaughter only.

5. Reduce potential for exposure to native cattle from Mexican origin feeder cattle. TAHC considered implementation of an approved pasture/approved feedlot system to keep Mexican origin feeder cattle separate from native cattle. Neither fiscal nor human resources were available to implement such a program. Additionally, the cost to Texas cattle producers would be excessive. Texas producers also believe that the burden should be placed on Mexico and Mexican cattle producers to provide cattle that do not pose a disease risk. Efforts to reduce potential for exposure consists of educational efforts to convince Texas producers to not pasture, feed or house Mexican origin feeder or rodeo/roping cattle with breeding or replacement cattle.

Texas has worked diligently for the past four years to regain Accredited Free Status for the state. We and our cattle industry members recognize how tenuous free status can be. While we diligently work to maintain our status, our future may not rest in our own hands. We continue to see significant numbers of Mexican origin cattle with TB lesions at slaughter. Over the years, epidemiological evidence has shown that the likely origin of a high percentage of the Texas TB infected herds was transmission from Mexican origin feeder or rodeo cattle. The long term fate of Texas' TB status is dependant on continued progress to eliminate Bovine Tuberculosis from Mexican exporting states.

Formal presentations continued with Mr. Pete Butchko, State Director, USDA Wildlife Services, Okemos, Michigan discussed on-farm program to mitigate the risk of TB from wildlife.

At the conclusion of the formal presentations, Dr. Connell reported on Resolutions and Recommendations from 2005. USDA-APHIS-VS responded promptly in writing to all three recommendations from 2005. Dr. Connell read those responses to the attendees.

Two Resolutions were proposed from the floor. Topics included official identification of dairy animals in interstate commerce with ISO RFID identification and encouraging the captive cervid industry to collect and submit serum samples in conjunction with TB testing in order validate serologic tests. These Resolutions were approved and forwarded to the Committee on Nominations and Resolutions.

**Status of the State and Federal Cooperative Bovine
Tuberculosis (TB) Eradication Program
Fiscal Year 2006**

Michael Dutcher
Senior Staff Veterinarian
Tuberculosis Eradication Program
Ruminant Health Programs

In fiscal year (FY) 2005, there was a rise in the number of cattle herds that were found to be tuberculosis-affected relative to the previous year. These herds were all located in areas where we have discovered affected herds in the past two years. In FY2005, a total of four affected herds were found. In contrast, nine affected herds were discovered in FY2006. While slaughter surveillance for tuberculosis (TB) continued to exceed our national goals in FY2006, all of the newly discovered herds were detected through herd level surveillance and epidemiologic investigations. This shows that while slaughter surveillance is critical to our eradication program, TB response plans remain critical in areas where the disease has recently been detected.

At the end of FY2005, 49 States and Territories were TB Free, including Puerto Rico and the U.S. Virgin Islands. Two States (NM, MI) were regionalized, and Texas was classified as Modified Accredited Advanced (MAA). New Mexico was regionalized in FY 2005 with a small zone in the eastern region of the State classified as MAA and the remainder of the State TB Free. Michigan was further regionalized during FY2005. At that time, Michigan was divided into three zones; the Upper Peninsula was classified as TB Free, 11 counties and portions of two others in the northeastern Lower Peninsula were Modified Accredited (MA) and the remaining counties in the Lower Peninsula were MAA.

In January 2006, as a result of the discovery of 3 affected herds in that State, Minnesota was downgraded to MAA status. During 2006, the State of Texas once again became eligible and applied for TB Free Status. Following a July Program Review, Texas' application was approved and the State was once again granted TB Free Status in September. As a result of these changes during FY2006, as of the end of the year, 49 States and Territories are TB Free (including Puerto Rico and the U.S. Virgin Islands), two States remain regionalized (NM and MI), and one State has Modified Accredited Advanced Status (MN).

Two of the nine affected cattle herds discovered in FY2006 were beef herds in Minnesota. The 2005 index herd was a beef herd discovered through slaughter surveillance. The two new herds were identified during the epidemiologic investigations of the previous three herds. Epidemiology for the index herd has been completed and the testing of trace herds around the country is ongoing. The source of this infection has not yet been determined and epidemiologic investigation of the subsequent herds is in progress. In addition to the two new beef herds discovered in 2006, two infected, hunter-harvested white-tailed deer were discovered. As a result of finding these additional herds and finding infected wildlife, the State of Minnesota and USDA have jointly developed a surveillance plan for livestock and wildlife statewide. The goal of this surveillance plan is to determine the extent of the infection in livestock and to determine whether or not the disease has become established in wildlife (wildlife reservoir). All herds affected in Minnesota to date have been depopulated with federal indemnity.

The other seven herds detected in FY 2006 were all in Michigan. Five of the seven were beef herds and the other two were dairy herds. Five of these herds (4 beef, 1 dairy) were located in the heart of Michigan's endemic zone while two (1 beef, 1 dairy) were outliers located in the western end of the zone. One of the herds (beef) was also determined to be a re-infection. All seven of these herds have been depopulated with federal indemnity.

Three affected herds detected prior to FY 2005 remain under quarantine, test and removal plans. The first of these herds is a dairy herd in New Mexico which declined to depopulate. Two dairies in Michigan also remain under quarantine, test, and removal plans. One of these quarantined dairies in Michigan was a re-

infected herd. All three herds continue to undergo regular herd testing as part of their herd plans. Michigan herd plans also include requirements for mitigating the risk of infection from wildlife.

FY2006 herd depopulations were accomplished at a cost of \$9,956,677. Indemnity costs for caudal fold tuberculin test positive animals in affected herds, comparative cervical tuberculin test- or gamma interferon-positive and suspect animals in non affected herds and for certain other situations were \$789,249 in fiscal year 06. These funds were paid out to 206 different producers. This also includes depopulation of cattle which were exposed to a positive Mexican feeder animal in Texas, cattle exposed to a positive adult cull cow in Texas, and cattle exposed to a positive Mexican roping steer in Kansas. Total indemnity costs for all purposes were \$10,745,926.

There were no TB affected captive or farmed cervid herds found in FY2005 and none were found in FY2006. These numbers continue to be encouraging, considering that a total of 41 affected cervid herds have been disclosed in the U.S. since 1991, but only four affected herds have been found in this century. Of the 41 affected herds, 30 were depopulated and 11 were tested out and qualified for release from quarantine. One of these 11 herds subsequently developed a recrudescence infection and was depopulated.

Due to continuing concern that the level of surveillance for TB in captive cervids may be inadequate, a working group of State-Federal personnel developed a surveillance plan for captive cervids in 2004. That plan was presented to, and conditionally approved by cervid industry leadership. This surveillance plan is integral to the TB eradication program's designation of individual States' TB status. This surveillance plan outlines necessary procedures for achieving and advancing through the different TB status levels (e.g., Modified Accredited to Accredited Free). During the 2004 annual meeting of the United States Animal Health Association (USAHA) Committee on Tuberculosis, the surveillance plan for captive cervids was presented and discussed and comments and suggestions were made. All of this input was incorporated into a draft Uniform Methods and Rules (UM&R) for Captive Cervids. This is the first such document specifically for captive cervidae and was presented at the 2005 meeting of the USAHA Committee on Tuberculosis and the Committee on Captive Wildlife and Alternative Livestock. Finalization of this UMR has been delayed while USDA drafts comprehensive revisions of both the bovine and cervid portions of the TB rules in the Code of Federal Regulations (CFR).

Currently there are 15 states and the U.S. Virgin Islands that have achieved and maintained their TB Free status for over 25 years; 22 states that have been TB Free for 15 or more years; 7 states that have been TB Free for 10 or more years; 3 states and Puerto Rico that have been TB Free for 5 or more years; and 2 states and two regionalized zones which have had TB Free status for less than 5 years. Given the 9 herds discovered this year and the 3 herds that remain under quarantine from last year, there were 12 affected herds among the estimated 993,560¹ cattle herds in the United States at the end of FY2006. Therefore, the national prevalence for FY2006 is estimated to be 0.0009%, or one affected herd per 110,396 U.S. herds. Though TB does exist in the United States, this extremely low level of prevalence should certainly be a significant factor in convincing international trading partners of the very low level of risk with TB in our cattle; and especially so for cattle originating in states with no disease for 5 or more years, of which there are 47 (including two territories).

Veterinary Services is continuing to provide oversight for the completion of the agreements to remove all dairy operations from the El Paso, Texas milk shed. The process is progressing as anticipated and is on track to be completed during calendar year 2006. There were a total of 10 dairy operations, some with multiple production units, being removed to create a buffer zone between the U.S. and the TB affected dairy operations immediately across the border in Juarez, Mexico. Eight of the 10 operations have completed closed out procedures. A ninth operation has completed depopulation, cleaning and disinfection, and final payments are in process. The tenth operation has completely depopulated and is currently undergoing cleaning and disinfection of the premises. During this program, designated VS and TAHC personnel ensured that every animal leaving the premises was identified and permitted to slaughter or quarantine feedlots. All depopulated cows were inspected at slaughter and had no TB lesions detected. Each depopulated dairy will remain out of operation, in the El Paso area, for at least the next 20 years.

Veterinary Services continues to work with Mexico on ensuring there is equivalency between the two countries' requirements. To accomplish this, reviews of many Mexican State TB programs have been conducted under the umbrella of the U.S. & Mexico Binational Committee. One of the milestones in the phased transition of participating Mexican States or Regions to equivalence with the U.S. program was to reach a prevalence level of 0.25% by June of 2003. The second milestone was to achieve 0.1% prevalence and qualify as equivalent to the U.S. modified accredited status by June of 2005. This second milestone was reached by many Mexican states as of June 2005 while many others continue to work toward that goal. These milestones continue to be a focal point for Review Teams. For this fiscal year there were 17 review trips completed. The review teams examined TB program integrity, progress and the level of prevalence. The travel, salary and related costs expended by Veterinary Services (VS) were \$262,100. There were 5 reviewers working under contract, 10 that were VS or IS employees, 2 NVSL employees, and 10 that were employed and paid for by State or industry agencies in Arizona, California, Michigan, Missouri, New Mexico, and Texas. The financial contributions of those States and industry groups are recognized and appreciated.

In addition to these site reviews conducted in Mexico, USDA also conducted national program reviews in Australia, Canada, and Mexico during 2006. In addition, an internal audit conducted by the Office of the Inspector General (OIG) was also completed in 2006. USDA is working with each country and with OIG to complete final reports and respond to any findings or recommendations from those reviews.

In 2006, anticipating some of the changes which will result from the adoption of a Cervid UMR, USDA revised its herd accreditation regulations for cervids. These revisions allow herd accreditation after two negative annual, whole herd tests and allow for recertification tests every three years. Extensive work has gone into completion of the CFR bovine and cervid revisions as well as a revision of the proposed "Roping Steer" rule. The CFR revisions are currently with regulatory writers undergoing editing and revision. Given the complexity of this revision and the linkage between the bovine, cervid, and international rules, this process is taking far longer than anticipated. A revision of the import requirements for Mexican roping cattle has been drafted and is currently undergoing final revisions and economic analysis. During FY2006, Veterinary Services finalized the rule reducing from 6 months to 60 days the period following a whole herd test during which cattle and bison may be moved interstate from a modified accredited State or zone or from an accreditation preparatory State or zone without an individual tuberculin test. USDA has also adopted or is in the process of adopting other policy changes resulting from USAHA TB Committee recommendations and resolutions in 2005. Among these policies is a policy allowing provisional tests to be run alongside traditional tests for TB in order to collect needed data for eventual test validation.

2006 marked the first year that States were required to implement the reporting and surveillance requirements adopted in the 2005 cattle and bison UMR. With the exception of a handful of States, most States tracked and reported caudal fold tuberculin test response rates as well as slaughter surveillance data for cattle originating in their State. In addition, a few States (AZ, ID, UT, MO, NE, and TX) made an effort to report slaughter data back to the State of origin for cattle slaughtered in their State.

The cooperative State–Federal–Industry effort to eradicate bovine TB from the United States has made significant progress toward eradication, markedly decreasing the prevalence of the disease. However, the goal of eradication has been elusive despite renewed efforts. Remaining challenges— primarily infected wildlife and infected cattle from Mexico—hinder eradication. During FY 2006, Veterinary Services finalized a new Strategic Plan for Eradication. This plan was developed with the aid of a 2004 USAHA TB Subcommittee as well as an in-house Tuberculosis Working Group (TWG) that reviewed the current TB eradication program in the United States. Though the plan has currently not received full funding, it still serves as a blueprint for how to focus the efforts of the program in the future.

Updates on States with Recent Infection

Arizona update: A large dairy, detected in 2005, was depopulated and the owner sold the property. A new dairy has moved onto the premises, but the State required a fallow period before the property could be occupied, required a clean herd test prior to moving, and is requiring an additional herd test in 2 years. Epidemiologic investigations are ongoing but have led to no additional sources of infection at this time.

Michigan update: Seven new affected cattle herds were found in FY 2006 (5 beef, 2 dairy). The State has now been regionalized into three zones: TB Free, MAA, and MA. Eleven hundred herds are tested in the MA zone annually. Eight hundred randomly-selected cattle herds are tested each year in the TB Free and MA zones. The prevalence of TB in wild deer continues to decrease. The prevalence in wild deer in the core of the Modified Accredited zone (DMU 452) was 1.2% in 2005 which is down 76% from 1995 and 0.5% from 2004. There are two dairy herds under test-and-removal herd plans that are classed as "carry-over herds" from FY 2005. One is located in Alpena County, with about 100 head total. This herd was detected through area (annual surveillance) testing and one positive animal was found. The other herd is located in Montmorency County, with about 175 head total. It was detected through area (annual surveillance) testing as well with 5 reactors found. This is the second time this herd has been found affected. It was originally found positive in 2000 and released in 2002, before being detected again in 2004.

Minnesota Update: There were 2 positive beef herds detected in FY 06. Both herds had either purchased or exchanged animals with the 2005 index herd. The index herd was a commercial/purebred beef herd. All affected herds have been located in either Roseau or Beltrami Counties. Through FY 06, all affected herds in Minnesota have been depopulated. Epidemiological investigations for all affected herds continue in Minnesota and additional states. In FY 06, The Minnesota Department of Natural Resources and the Minnesota Board of Animal Health worked with USDA to develop a surveillance plan in both livestock and wildlife. This surveillance plan calls for risk-based, statewide testing of livestock and wild deer to determine the extent of the TB infections in the State and to also clarify whether the disease has become established in wildlife or not. Through FY 06, USDA has spent \$3.5 million dollars for indemnity in Minnesota. Additional federal funding has been provided in support of TB surveillance in Minnesota in both cattle and wildlife, funding for fee-basis veterinarians, two incident command teams, and federal TB testing teams.

New Mexico update: The affected herd epidemiological tracebacks and investigations were completed in 2005. An additional infected animal was found in one dairy during FY05 and that premises remains under quarantine as the owner opted to continue under test-and-removal in place of depopulation. The herd was tested twice in FY 06 with over 3600 head tested. 29 reactors were sent to slaughter. To date, no additional TB has been detected in the herd. USDA is helping fund implementation of a TB management plan in New Mexico which includes annual testing of all herds within the MAA zone, a mandatory identification program and an epidemiologic survey of all dairies and heifer-raising facilities in New Mexico. During 2006, New Mexico tested 9 dairies and 28 beef or roping facilities in the MAA zone. Almost 22,000 tests were conducted with 39 reactors going to slaughter. Through FY 06, no additional TB has been detected anywhere in New Mexico. The New Mexico Livestock Board plans to conduct a risk assessment this fall to look at management factors which may have a direct effect on the risk of TB infection for dairies.

Texas update: There were no affected herds carried over from FY05 into FY06. There were no affected herds disclosed in FY06. The last affected herd was depopulated in September 2004. Since that time, the State of Texas has tested 818 dairies and 2,014 beef seed stock herds without detecting any additional TB. Cooperative agreements with USDA have helped fund the following eradication strategies; testing of all dairy and breeding cattle moving out of state, statistical surveillance of dairy, seed stock, and purebred herds, improved slaughter surveillance, annual testing for rodeo/roping steers, and mitigation of risk from imported Mexican cattle. Based upon a TB program review in June and the State's other qualifications for advancement, Texas regained TB Free status in September.

TB Surveillance in U.S. Livestock FY 2006

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Surveillance for bovine tuberculosis (TB) in the US consists of slaughter surveillance for granulomas and skin and blood testing in cattle. The national granuloma submission program for adult cattle met or exceeded the target rate of 5 submissions per 10,000 adult cattle killed for the fifth consecutive year in fiscal year 2006 (FY2006), with 11.7 granuloma submissions per 10,000 adult cattle killed. A total of 9,334 granulomas were submitted from 195 US plants that slaughtered approximately 32 million cattle, including 5.6 million adult cattle. Of the 195 slaughter plants, 40 plants located in 20 states slaughtered 95.7 percent of all adult cattle and submitted 7,284 (78 percent) granulomas. The estimated submission rate for adult cattle from these 40 plants ranged from 2.1 to 29.5 granulomas per 10,000 slaughtered. Compliance with the granuloma submission standard is defined as achieving greater than or equal to 85 percent of the target rate; 37 (92.5 percent) plants met this criteria. Three plants achieved less than 85 percent (83, 74 and 52 percent).

A critical component of the granuloma submission program is diagnostic laboratory support. Three diagnostic laboratories and their professional staffs provide outstanding support for the national bovine TB surveillance effort: the National Veterinary Services Laboratories (NVSL) in Ames, Iowa, the FSIS Pathology Laboratory in Athens, Georgia, and the California State Diagnostic Laboratory located in Tulare, California. A total of 6,574 (70.4 percent) samples were sent to NVSL, 1,482 (15.9 percent) samples were evaluated by the FSIS lab, and 1,278 samples (13.7 percent) were tested in California.

The most common diagnoses from 6,574 samples submitted to NVSL included actinobacillosis or actinomycosis (27.2 percent), abscess or pyogranuloma (19.5 percent) and neoplasia (17.0 percent). Other common diagnoses included adenitis (7.0 percent), coccidioidomycosis (5.4 percent) and pneumonia (4.8 percent). No significant findings were documented in 1.9 percent of submitted samples.

Slaughter surveillance continues to identify new cases of TB in both adult and fed cattle. Twenty-eight new cases of TB were found in cattle in US slaughter plants from October 1, 2005 through September 30, 2006, compared with 40 cases in FY2005. No cases of TB were detected in bison or captive cervids slaughtered under state or federal inspection during FY2004 through FY2006.

Of the 28 new TB cases, one (3.6 percent) case occurred in an adult beef cow in Texas. Trace-back to the apparent herd of origin found no additional infected animals, but the herd was depopulated as an exposed herd. The remaining 27 (96.4 percent) cases were detected in fed steers or heifers considered to be beef-type cattle; initial investigations for these cases occurred in Texas (25 cases) and Kansas (2 cases).

One of the 27 fed cattle cases had been used for roping and resulted in exposure of breeding cattle. TB exposures of native, US breeding cattle by infected, Mexican-origin cattle have been documented on several occasions since 1990. In August, 2006 an "M" branded steer wearing official Mexican eartags was killed in a small Kansas slaughter facility where extensive lesions of tuberculosis were detected in the head and thoracic lymph nodes. This steer had previously been used for roping activities in both Kansas and Oklahoma since being imported into the United States at the port of Presidio, Texas in February, 2004. A total of 59 roping steers were imported in the lot.

In November, 2005 the roping steer was finally moved to a ranch in central Kansas for finish feeding. At this location it was shown to have exposed 104 Brangus breeding cattle on the ranch prior to being slaughtered. The exposed cattle were appraised at \$82,480 and depopulated with federal indemnity. Neighboring herds determined to be potentially exposed to other exposed cattle were required to be TB tested, as were other herds that may have had exposures while the steer resided at other Kansas facilities. No further spread of the infection in Kansas has been determined to date.

Epidemiologic investigations are ongoing as to the dispositions of the remaining 58 exposed steers that accompanied the infected steer into the United States. However, it is unlikely that many will be located due to the lack of adequate records of rodeo contractors who contracted these steers to numerous rodeo events since the steers entered in February 2004.

This incident once again demonstrates the potential damage that such longer-lived, roping cattle may cause to our livestock industries if they originate from infected sources in Mexico. Human exposure to zoonotic TB may result as well if infected steers are used at rodeo events.

The herd or country of origin is known for 22 (78.6 percent) of the 28 new cases in FY2006. A total of 21 cases are of Mexican origin; of these, 20 were identified by official Mexican eartag present at the time of slaughter. Epidemiologic investigation indicated Mexican origin in one additional case. One case was untraceable due to lack of identification and commingling cattle from different sources; 5 cases are pending further investigation. The state of origin for 20 cases with Mexican official eartags include Aguascalientes, 5 cases; Durango, 4 cases; Nuevo Leon, 3 cases; Chihuahua and Coahuila, 2 cases each; Campeche, Sonora, Tamaulipas and Veracruz, 1 case each.

In FY2005, approximately 1.2 million cattle were imported in the US from Mexico. A majority are feeder cattle that go to slaughter approximately one year after arriving in the US. Using FY2006 TB cases of Mexican origin and FY2005 cattle import records, the overall incidence of TB cases from Mexico for FY2006 is 1.7 cases per 100,000 imported cattle, a substantial decrease from 1995 through 1997, when there were 7.3 to 18.7 infected cattle per 100,000 imports annually. Beginning in 1998 through the present, the annual rate has ranged from 1.0 to 5.4 infected cattle per 100,000 imports. Though this represents a sustained decrease from earlier years, infected cattle continue to be imported from Mexico and present an ongoing risk of TB transmission to US cattle.

The number of new TB cases by Mexican state was evaluated for fiscal years 2001 through 2006. During this time period, 21 cases have been traced back to Chihuahua, the largest exporter of cattle to the US. Sonora, the next largest exporter, had the lowest annual rates of infected cattle found in the US, importing a total of two infected cattle in the past four fiscal years. Aguascalientes and Nuevo Leon had the highest rate of infected cattle, but export relatively small numbers of cattle to the US.

Tuberculin testing of livestock also contributes to the national TB surveillance system. During FY2006, at least 896,953 caudal fold tests were conducted on cattle and bison nationwide, with 9,710 responders (1.1 percent). A total of 536,830 tests were performed in Western Region states (WR) and 360,163 in Eastern Region states (ER). However, 1.7 percent of tests in the ER were classified as suspect versus 0.7 percent of tests in the WR. A similar difference in response rate between regions occurred in FY2005 when there were 1.9 percent and 1.1 percent reactors in the ER and WR, respectively.

Nationwide, 21,037 captive cervids were tested by the single cervical test and reported to the USDA national database during FY2006, with 337 suspects (1.6 percent). Regionally, 16,245 cervids were reported as being tested in the ER versus 4,792 cervid tests in the WR. Response rates were 1.6 percent and 1.7 percent in the ER and WR, respectively.

The gamma interferon test has been available as an official test in the national eradication program for bovine TB for two years. Four laboratories throughout the United States routinely conduct gamma interferon testing. Collectively, these labs tested at least 6,673 blood samples collected from cattle. The origin state of cattle tested by this method include Arkansas, California, Colorado, Kansas, Michigan, Montana, Nebraska, New Mexico, Oklahoma, Oregon, Texas, South Dakota, Washington, and Wyoming. A total of 184 (2.8 percent) tests were positive.

Elephant TB Diagnostics and Guidelines

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Background: Although tuberculosis in elephants has been sporadically occurring for as long as 2000 years, it “emerged” as a concern in elephants in the U.S. in 1996. Since the two elephants that died were part of a privately owned traveling herd, the issue of human and elephant health was raised. In response, an advisory panel was formed by the USDA-APHIS to provide recommendations on diagnostic and treatment protocols for the remaining elephants in the herd. Once five additional cases were diagnosed, protocols for surveillance, testing and treatment of all elephants were developed. These were published as the “Guidelines for the Control of Tuberculosis in Elephants” as Policy 21 under the Animal Welfare Act. Elephants are grouped by culture results and exposure history, with additional recommendations for monitoring and treatment. The initial guidelines were published in 1998, with further revisions made in 2000 and 2003 based on new information.

Current Status of Elephant TB: Between 1994 and 2006, there have been 36 culture-confirmed cases of tuberculosis in U.S. elephants, with additional cases occurring worldwide. There has only been one case of *M. bovis* in an African elephant; all the other cases have been caused by *M. tb*. Asian elephants have been predominantly affected with 33 cases and 2 cases in African elephants. Additionally, two African elephants developed clinical disease associated with infection from *M. szulgai*. The majority of infected animals did not show clinical signs prior to diagnosis with a positive culture. Many of these cases were diagnosed at post-mortem examination.

2005 Elephant TB Workshop: A workshop was held in May 2005 with the goal of reviewing the current knowledge of tuberculosis in elephants. Specific objectives included assessing the status of the experimental diagnostic tests being used in elephants, evaluating experience gained from elephants that had been treated for TB, and identifying specific areas of research that would advance our knowledge of diagnosis and treatment. A number of action plans and recommendations were developed. These are outlined in the proceedings of the 2005 USAHA Committee on Tuberculosis report.

2006 Elephant TB Workshop: The same group of participants met in September 2006 to determine progress on the action plans developed in May 2005.

- **Diagnostic Test Development**

The primary experimental diagnostic tests being evaluated at this time are the ElephantTB STAT-PAK™, a rapid test using lateral-flow immunochromatography, and a multiantigen print immunoassay (MAPIA) optimized with antigens for elephants. More detail on these tests has been provided in the 2005 report. Chembio Diagnostic Systems is currently undergoing the licensing process for the ElephantTB STAT-PAK™ and expects to have the test commercially available in 2007. The MAPIA would continue to be performed by Chembio until it could be licensed for use in other laboratories.

To date, a total of 190 individual elephants have been tested using the Rapid Test and MAPIA. The test population includes both zoo and privately owned elephants. Most elephants were tested on a prospective voluntary screening basis. A few animals were tested as suspect or possible in contact animals. History of trunk wash culture status or other health problems was determined in the majority of cases. Of 22 elephants that were confirmed with tuberculosis (culture positive for either *M. tb* or *M. bovis*), all 22 were positive by both Rapid Test and MAPIA. The 2 African elephants infected with *M. szulgai* were also positive by Rapid Test, but had a distinct band pattern in MAPIA. There were 35 elephants that were considered “exposed to TB” through history of contact. None of these elephants was considered actively infected by the gold standard of positive culture. Eighteen (51%) reacted positively in the screening Rapid Test, but only 13 (37%) were considered positive in MAPIA. There are several possible explanations for these results: 1) elephants may be considered early in infection and not shedding; 2) elephants may be latently infected; or 3) the result is a false positive. The largest group was

the “healthy/other disease” category of elephants, which could include treatment for chronic inflammatory joint problems. Out of the 131 elephants, only 4 reacted in the Rapid Test, and none were positive in MAPIA.

In a separate study, sera from elephants that had non-tuberculous mycobacteria cultured from trunk wash samples were tested to determine whether atypical mycobacteria could induce cross-reactive antibodies. None of the samples tested showed any reactivity in either Rapid Test or MAPIA.

- **Review of Treatment**

Although specific treatment regimens were not reviewed at this time, those participants that had experience treating elephants with the current dosing recommendations had observed significant adverse effects. A few cases of elephants treated and monitored serologically did demonstrate changes in antibody responses over time. Therefore, in addition to trunk wash cultures, serologic monitoring may be useful in determining the effectiveness of treatment. However, more data is needed.

Update of “Elephant Guidelines”

The working group began to consider the implications of the new data obtained on the 2003 version of the “Guidelines for the Control of Tuberculosis in Elephants”. There are a number of changes that are currently under consideration but will require further discussion. These include:

- Addition of the Rapid Test and MAPIA results to trunk wash culture for diagnostic classification of individual elephants
- Revision of contact/travel restrictions and treatment recommendations based on individual culture and serologic status rather than exposure history
- Changes in treatment recommendations to minimize adverse effects in elephants
- Increase frequency of monitoring of culture-negative, seropositive elephants
- Changes in definitions to help clarify interpretation of guidelines

The working group is in the process of reviewing these changes in the guidelines and a set of new recommendations is anticipated to be available in the spring 2007.

SUMMARY:

- Additional data on TB diagnostic tests (Rapid Test, MAPIA) have shown promise for improving our ability to detect infection in elephants.
- The revised guidelines will provide improved interpretation of diagnostic tests, treatment regimens, and monitoring methods. There may be a new classification system for individual elephants with associated contact/travel restrictions and treatment/monitoring recommendations.
- Since serologic result interpretations are still unclear as they pertain to animals with negative culture results (potentially latent infections), caution is recommended before application of these tests in regulatory situations at this time.
- Until licensed, serologic tests (Rapid Test, MAPIA) may not be routinely available.

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CURRENT STATUS OF THE BOVINE TUBERCULOSIS ERADICATION PROGRAM IN MEXICO

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In Mexico, the Bovine Tuberculosis (TB) eradication program is instrumented and operated by three levels of personnel in the campaign: The Federal Government Personnel by SAGARPA with normatively, regulation and supervision activities in coordination with the State Government Personnel that coadyuvate with supervision and operative elements within the campaign, and the last one are the Committees Personnel in the states, those are the Cattleman's representation with operative activities, whose in coordination with Federal and state personnel conform the TB eradication Program staff.

The Campaign's normativity in Mexico is supported by The Federal Law of Animal Health, Chapter III, Article 4. – Published on June 18, 1993. Modifies done: June 12, 2000 and June 1st 2000 and The Official Mexican Normativity NOM-031-ZOO-1995, National Campaign against bovine tuberculosis (*Mycobacterium bovis*) Published on March 8, 1996. Modified August 27, 1998. These recognize three phases of the campaign listed below:

Free Phase: No states.

Eradication Phase: (prevalence rate < 2%) actually 9 states are classified in this phase:

Campeche, Colima, Chihuahua, Nuevo León, Quintana Roo, Sinaloa, Sonora, Tamaulipas y Yucatán, and diverse Mexico's regions in the states as Aguascalientes, Baja California, Coahuila, Chiapas, Durango, Jalisco, Nayarit, Puebla, Veracruz and Zacatecas. Actually, 4 regions are in process of National recognition to eradication phase program: Jalisco (A3), Oaxaca (A1), Puebla (A3), Veracruz (A1), and Tabasco.

Control Phase: (prevalence rate > 2% or unknown) The rest of the country.

Mexico's TB eradication Program is recognized for the USDA for low prevalence TB regions, the current classification is as follows: Advanced Modified Accredited Zone: North of Sonora. Modified Accredited Zone: Campeche, Chihuahua, Nuevo León, Quintana Roo, Sinaloa, Sonora, Tamaulipas and Yucatán, and some states regions of Baja California, Coahuila, Jalisco, Nayarit, Puebla, Veracruz and Zacatecas. In the classification of Accredited Preparatory there are the state's regions of Aguascalientes, Colima, Chiapas and Nayarit. Additionally there are proposed some regions to the USDA's recognition as Durango, Guanajuato (A1), Guerrero, Jalisco (A3, A4, A5), Michoacan (A), Oaxaca (A1)- Veracruz (A1), Tierra Caliente Region, San Luis Potosí (Huasteca and Altiplano regions) and the conjuncted region of Chiapas and Tabasco.

Mexico exported to the United States approximate 1,400,000 head of cattle last fiscal year with a record of 17 cases of TB founded by passive surveillance in slaughterhouses in the United States. The efforts of Mexico to perform the program are very important and the advance of the TB eradication program are very significant in the 12 last years. The prospective goals of the campaign includes to perform the regulations, to get more resources for the campaign reducing "B" zones and to perform the campaign actions with the milk productive sector between others.

Status Report of the U.S.-Mexico Bi-National Tuberculosis and Brucellosis Eradication Committee

Billy G. Johnson
Committee Coordinator

The U.S.-Mexico Bi-National Tuberculosis and Brucellosis Eradication Committee (BNC) was formed in 1993 based on a recommendation by the USAHA with responsibility to provide oversight on the eradication programs in each country and to provide recommendations for the minimum requirements for the exportation of cattle from Mexico to the United States. The BNC has sixteen members with representation from the livestock industries, research, and State and federal officials. It should be pointed out that there is no government funding for the Committee members to attend the meetings. These expenses are paid by the members or their sponsoring organizations. The Committee has met three times during the past year, twice in the US in conjunction with the National Cattlemen and Beef Association and at the USAHA meetings and once in Mexico during the CNG meeting. There will be a meeting on Thursday, October 19 during this USAHA meeting. These organizations as well as other industry groups have worked cooperatively with the BNC since it's beginning by providing space, financial aid and other assistance. By meeting at these locations, cattlemen and other industry and veterinary officials have the opportunity to participate.

The BNC has no authority to pass or implement regulations or procedural changes. However, it has been involved in providing input and recommendations in all phases of the programs since its formation. The BNC worked closely with APHIS officials in developing the present requirements and in developing review procedures to be followed in Mexico. The most critical step in forming the BNC was to bring the livestock industries into the process of program development and implementation.

Status reports are provided at each meeting on the following issues:

- Traceback efforts
- Eradication program progress
- Research programs in each country
- State reviews
- Interstate and inter zone movement controls
- Law and regulation adequacy in each country

During the past year the Committee meeting structure has been changed to spend less time on these status reports and more time for industry representatives to present concerns and recommendations which they feel should be considered. During the past year the following issues have been presented and discussed.

1. Standardization of tuberculins used in Mexico, the United States and Canada. This is progressing and a Committee with representatives from the three countries will be meeting this week to start this process.
2. Approval of designated feedlots for Modified Accredited Advanced states or zones. Designated feedlots are permitted in Modified Accredited and Accreditation Preparatory states. Industry officials in Modified Accredited Advanced States indicate they are not getting sufficient cattle to meet their needs.
3. Movement of purebred cattle from Accredited Free herds in non-accredited states to all other states.
4. Individual animal identification systems.
5. Procedures at U.S. border stations for processing Mexico cattle being imported to the U.S.

6. Elimination of the Certificate of Origin in Chihuahua where a mandatory green ear tag system is required for all cattle being moved that will allow for the tracing of animals to their herds of origin.
7. A system for the movement of rodeo bulls between status and non status states.
8. A system for sampling slaughter cattle in slaughter plants that are too small to have full time slaughter inspection.

The procedures in place allow time for Secretaria de Agricultura, Ganaderia, Desarrollo Rural, Pesca y Alimentacion (SAGARPA) and the Mexico industries and APHIS and the U.S. industries to meet prior to the full BNC meeting to develop their issues and then time after the BNC meeting for SAGARPA and APHIS officials to meet to discuss actions to be taken on the issues.

Problems will continue to occur for many cattle producing areas in Mexico. These include:

- The difficulty for the Non Accredited zones in states with Modified Accredited zones to make the required progress if large infected dairies exist.
- The problem of meeting the required herd prevalence levels in Modified Accredited zones if infected dairies exist.
- The ability to provide adequate indemnity funds to depopulate herds in meeting the required prevalence levels.

Although the BNC was originally established for tuberculosis procedures, brucellosis was later added to the Committee responsibilities. Although the brucellosis programs in most states in Mexico are not progressing at the same rate as their tuberculosis eradication programs, the state of Sonora has progressed well and is looking at Brucellosis Class A status. Also a U.S-Mexico Tick Committee meets at the same time as the BNC and provides a summary of their meeting to the BNC since most of the BNC members are also involved with tick eradication programs.